

INSTRUCTIONS FOR SUBMISSION OF THE FIELD BLANK SAMPLE

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE PROCEEDING

verify ahead of time that you will have all the necessary supplies

Your site has been selected to participate in the NADP/NTN Field Blank Project. Participation in this study requires a week without precipitation.*

THEREFORE, DO NOT SUBMIT A FIELD BLANK SAMPLE UNTIL A WEEK WITHOUT PRECIPITATION* OCCURS AT YOUR SITE.

The sample you have been sent should be submitted during the SECOND QUARTER of 2001 (April 3 to June 26), after the first standard Tuesday to Tuesday sampling week without precipitation .

If this time period passes without a **full week with no precipitation***, retain the sample. Your site will be carried over into the next quarter. Continue to carry over to the following quarter until a year from the end of your originally assigned quarter passes (the label on the field blank sample indicates the last date for sample submission). If your site does not meet the conditions in Step B during this time period, enter “no dry week between April 3, 2001 and June 25, 2002” on the two pre-addressed postcards. Return the postcards promptly and discard the sample.

**provided additional conditions specified in step B of the instructions are met.*

ENCLOSED PLEASE FIND THE FOLLOWING SUPPLIES:

- one - field blank sample
- one - postage paid ‘FIELD BLANK RECORD – CARD 1’ post card for sample transfer, decanting times, rinse water present question, sample pH and sample specific conductance.
- one - postage paid ‘FIELD BLANK RECORD – CARD 2’.

If you did not receive any of these items or these instructions are unclear, immediately call John Gordon at 303/236-1837.

OTHER SUPPLIES YOU WILL NEED (ITEMS PROVIDED BY CAL THAT YOU NORMALLY USE FOR A WEEKLY SAMPLE):

- one - clean field bucket and snap on lid (bagged)
- one - clean 1 liter High-Density Polyethylene (HDPE) wide-mouth sample bottle (bagged)
- four - clean 4 milliliter vials.
- one - standard black mailer for shipping samples to the CAL

OVERVIEW: After verification that no precipitation occurred, 75% of the field blank sample will be poured into the bucket that spent the previous week installed in the “wet side” of the collector. The field blank solution should then be allowed to equilibrate in the bucket for at least 24 hours. After the equilibration period the sample is processed and submitted to the CAL in the exact same manner as an actual precipitation sample. The remaining 25% of the field blank sample will be shipped to the CAL in its original container. There are many detailed steps that need to be correctly completed, so please read all of the instructions carefully before you begin, and follow all instructions in the order they are listed.

STEP BY STEP INSTRUCTIONS

Procedures for submitting the Field Blank sample from your site to CAL:

A) Remove collection bucket from the field

Remove wet side collection bucket and snap lid on bucket, using the plastic bag as a glove. Install new bucket as usual. Remove the raingage chart and install new one. Transport the sealed bucket in labeled plastic bag to the laboratory.

B) Verification of no precipitation

First, process and submit a field blank sample only if you have a standard Tuesday to Tuesday period when no precipitation occurred. Do this by checking the raingage chart. Make sure the AeroChem collector lid did not open or uncover the wet-side bucket. To ensure the lid did not open, verify that the event pen recorded no marks indicating that the sensor was activated even once. If you live in an area with extremely high humidity that makes it unlikely you will ever have a week with no lid openings, please call or email John Gordon for special instructions. Verify the record is complete and there were no clock stoppages or pen skips on the event recorder chart. Inspect the wet side bucket to ensure that it is at least as dry as it was when you installed it the previous week. If there were a few drops of rinse water in the bucket when you installed it the previous week, then there may still be a few drops of rinse water in the bucket. THE KEY INDICATOR IS THAT THERE WERE NO LID OPENINGS, so please be sure to verify there are no pen marks indicating that the sensor was activated. Once you have verified that the lid for the AeroChem did not open during the previous week, proceed to step C to begin processing the field blank sample. If the conditions specified regarding no lid openings and only rinse water in the bucket are not met, proceed to submit your weekly sample in the normal manner, and cease any further processing of the field blank sample for this week. **If the rain gage chart indicates the collector opened during the week you will need to delay submission of the field blank until a completely dry week occurs, with absolutely no periods when the collector opened.¹**

C) Pour the field blank sample into the wet side bucket removed from the field

During the transfer of the sample please wear laboratory gloves and be careful not to contaminate the sample in any way. Pour 75% of the field-blank sample (down to the line on the bottle) into the bucket removed from the field. Tightly recap the bottle and place it in the plastic bag in which the field-blank sample was shipped in. You will send this bottle containing 25% of the field-blank sample to CAL for analysis. (Instructions for this are included in **STEP I**). Cover the bucket securely with its clean snap-

¹If you have any difficulties deciding whether the criteria for submitting the field blank have been met, please call John Gordon at 303/236-1837.

on lid. Swirl and shake the sample in the bucket several times to make sure that it has good contact with the bucket walls and lid, then set the bucket aside for ~24 hours.

D) **Complete ‘Part A’, ‘Part B’, and ‘Part C’ of the ‘FIELD BLANK RECORD--CARD 1’ post card**

Record on the “FIELD BLANK RECORD – CARD 1” post card, under “Part A”, the date and time that you transferred the sample into the bucket. Under “Part B” of the post card check the appropriate box, either “rinse water present in bucket” or “bucket was dry”, depending on what you found. **IT IS VERY IMPORTANT THAT YOU CHECK WHETHER RINSE WATER WAS PRESENT OR IF THE BUCKET WAS DRY. IN ADDITION, THE ONLY WATER PRESENT IN THE BUCKET BEFORE YOU ADD THE 75% OF THE SAMPLE SHOULD BE RINSE WATER.** Under “Part C”, record the On Date, Off Date, the field blank sample pH, and the corrected field blank sample conductance.

E) **Process sample as a normal sample**

After allowing the sample to equilibrate with the bucket for ~24 hours, continue to process the sample as if it were a normal precipitation sample from your site. As you go through the following steps, keep in mind that the goal is to handle the field blank sample in the same manner that you would an actual precipitation sample. Please take the same care with the field blank sample as you would with the weekly precipitation sample. Complete the sections of the Field Observer Report Form as described in Step F.

F) **Completing your Field Observer Report Form**

Use a normal Field Observer Report Form (FORF) from the supply of forms sent to you by the CAL. **Indicate in the remarks section that this is a Field Blank Sample.** FILL OUT THE FORF FOLLOWING THESE INSTRUCTIONS:

1. **STATION** Enter your site name and site id.
2. **OBSERVER** Print your name and initials.
3. **BUCKET ON/BUCKET OFF** These dates will be the same as if you were submitting a real precipitation sample.
4. **SITE OPERATIONS** Check appropriate boxes for items 1, 2 and 3.
5. **SAMPLE CONDITION** If you observed any contamination, check the appropriate box. Be sure to note if any contamination is accidentally introduced.
6. **BUCKET SAMPLE WEIGHT** Weigh the bucket+lid+sample and record the weight, calculate the appropriate sample depth. NOTE: This value will not agree with the total raingage depth value because no precipitation was received. Leave the box below “Do these values agree within $\pm 5\%$?” blank.
7. **PRECIPITATION RECORD** Record the precipitation record off the raingage chart removed for this week. NOTE: If conditions are correct for the field blank

sample to be submitted then these values should be zero for the week. Check yes under BOTTLE USE for the question “Did you pour sample into the bottle?”.

G) **Transfer the sample from bucket to bottle and perform field chemistry**

After the ~24 hour equilibration period, transfer the field-blank sample from the field bucket into a clean 1 liter sample bottle provided by the CAL. Follow standard NADP protocols. Be sure that you do not touch the lip of the bucket to the lip of the bottle. Pour all of the contents from the bucket into the bottle. **Record on the “FIELD BLANK RECORD – CARD 1” post card, under “Part B”, the date and time that you transferred the field blank sample from the bucket to the 1 liter bottle.** Complete the remaining sections of the FORF as follows:

8. **SAMPLE CHEMISTRY**

Pour the normal amounts from the 1-liter HDPE bottle into clean vials and measure the pH and specific conductance following standard procedures; record your measurements.

9. **SUPPLIES**

Request any supplies needed.

10. **REMARKS**

Please write in the remarks that this is a FIELD BLANK SAMPLE. This is very important. Record any other remarks as you normally would.

H) **Fill out the remaining post cards and notify the NADP/NTN**

Fill in the requested information regarding the field-blank sample on the back of the enclosed post card labeled “**FIELD BLANK RECORD – CARD 2**”. Please mail this post card along with the “**FIELD BLANK RECORD – CARD 1**” post card promptly. Because the date you will be submitting the sample depends on a dry week occurring, and is therefore not known ahead of time, it is important that you promptly call Scott Dossett, the NADP/NTN CAL site liaison at 800-952-7353 or send e-mail to sdossett@uiuc.edu upon submitting the sample.

I) **Mail both portions of the Field Blank sample to the CAL in the black mailer**

Ship the 1 liter bottle to the CAL in the same manner as if it were the actual wet deposition sample for your site in the BLACK SHIPPING MAILER. Be sure to also include in the BLACK MAILER the bottle with the remaining 25% of the field blank sample.

Enclose the rain-gage chart from your site, and the white and yellow copies of the field-blank sample Field Observer Report Form (completed as stated above in steps 1-10) in the BLACK MAILER. Retain the pink copy for your records.

As a final checklist, please make sure the following items are in the black mailer:

- 1) the 1 liter sample bottle, in plastic Ziploc shipping bag, with site id , off date and time on the bag
- 2) the remaining 25% of sample in the field blank sample bottle, in a plastic Ziploc shipping bag
- 3) the actual raingage chart
- 4) white and yellow copies of the FORF, with “**FIELD BLANK SAMPLE**” in the remarks field

5) bagged bucket and lid, please write site ID, off date and time on the orange bag

ANSWERS TO FREQUENTLY ASKED QUESTIONS:

1. **Q** If there was some precipitation at my site during the past week, do I still submit the sample?

A No, you will not submit the field-blank sample in this case. Remember, the field blank sample is to be poured into the bucket which was installed in the collector only if there was a week with no precipitation, no collector openings, and when no water (other than rinse water) is present in the collector bucket.
2. **Q** There was some precipitation at my site during the past week, but the collector malfunctioned and never opened. Do I still submit the field blank sample?

A No, you will not submit the field-blank sample in this case. If the collector did not open due to a malfunction, please wait to submit the field blank sample until a dry week occurs when all the equipment operated correctly. Process the weekly sample at your site as usual.
3. **Q** There was no precipitation during the week, but the bucket has a few drops of water in it. I'm sure it is either condensation or water that was in the bucket when it arrived from CAL. Do I submit the field blank in this case?

A Yes, you will submit the field-blank sample in this case. However, if any water other than CAL rinse water gets in the collection bucket, the field blank sample should not be submitted at this time. *If, after reviewing the sensor activation pen marks, you are still not sure if the water in the bucket is only CAL rinse water, do not submit the sample as a field blank.* Process the weekly sample at your site as you normally would.
5. **Q** Do I need to write anything on the 1-L shipping bottle for identification purposes?

A No, send the sample in as if it were a regular sample from your site. Note the site id, off date and time on the plastic bag.
6. **Q** What information should go on the enclosed post cards?

A Enter the information about the field-blank sample on the post cards. One is for the field blank residence time in the bucket consisting of sample transfer and decanting times. The other two contain information for sample submission.

Please direct any further questions regarding the field-blank sample program to:

John Gordon
(303) 236-1837
e-mail address: jgordon@usgs.gov